

IAU Minor Planet Center

MPC Operations Status

[Processing \(Info\)](#)
[ECS: Accessible](#)

Observer Services (NEOs)

- NEO Services Overview
- NEO Confirmation
- NEO Confirmation (RA order)
- NEO Ratings
- NEO Page
- NEO Observation Planning Aid
- NEOChecker
- NEOCMTChecker

Observer Services

- Services Overview
- IAUMail
- Minor Planet & Comet Ephem.
- Natural Satellite Ephemerides
- New Object Ephemerides
- MPChecker
- CMTChecker
- Distant Artificial Satellites
- Observing List Customizer
- Sky Coverage

Orbital Elements

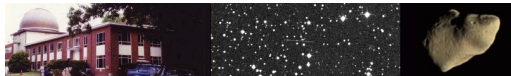
- Orbital Elements Overview
- MPCORB
- Orbital Elements for Programs
- MPCAT
- MPCUPDATE
- Astrometric Observations**
- MPCAT-OBS
- MPCOBS
- Publications**
- Publications Overview
- MPECs
- MPC Archive
- MPC RSS Feeds
- CBAT RSS Feeds

Documentation

- Documentation Overview
- Minor Body Astrometry
- MPC Status Page
- What's New
- Lists and Plots**
- Lists and Plots Overview
- Minor Planets
- Comets
- Animations
- General Information**
- Astronomical Headlines
- Press Information Sheets

General

- Contact Us
- Index
- Site Map
- Search Site



MPEC 2010-R110: 2010 RA91

The following [Minor Planet Electronic Circular](#) may be linked-to from your own Web pages, but must **not** otherwise be [redistributed electronically](#). A form allowing access to any *MPEC* is at [the bottom of this page](#).

[Read MPEC 2010-R109](#) [Read MPEC](#)

[2010-R111](#)

M.P.E.C. 2010-R110

Issued 2010 Sept. 14, 11:22 UT

The Minor Planet Electronic Circulars contain information on unusual minor planets and routine data on comets. They are published on behalf of Commission 20 of the International Astronomical Union by the Minor Planet Center, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.

Prepared using the [Tamkin Foundation Computer Network](#)

MPC@CFA.HARVARD.EDU

URL <http://www.minorplanetcenter.org/iau/mpc.html> ISSN 1523-6714

2010 RA91

Observations:

K10R91A*	C2010	09	13.19605	22	42	08.78	+04	22	34.7	19.5	R	ER110G89
K10R91A	C2010	09	13.21429	22	42	04.77	+04	21	55.7	19.5	R	ER110G89
K10R91A	C2010	09	13.22494	22	42	02.42	+04	21	33.0	19.5	R	ER110G89
K10R91A	KC2010	09	13.88030	22	39	49.68	+03	57	29.2	19.6	R	ER110J04
K10R91A	KC2010	09	13.88249	22	39	49.14	+03	57	24.1	19.9	R	ER110J04
K10R91A	KC2010	09	13.88499	22	39	48.61	+03	57	18.4	19.9	R	ER110J04
K10R91A	KC2010	09	13.97414	22	39	26.49	+03	53	39.2	19.5	R	ER110204
K10R91A	FC2010	09	13.97569	22	39	25.88	+03	53	34.9	19.5	R	ER110473
K10R91A	FC2010	09	13.97638	22	39	25.71	+03	53	33.3	19.5	R	ER110473
K10R91A	KC2010	09	14.04745422	39	14.52	+03	50	54.3	19.8	V	ER110H21	
K10R91A	KC2010	09	14.05644722	39	12.50	+03	50	34.3	20.0	V	ER110H21	
K10R91A	KC2010	09	14.06382522	39	10.84	+03	50	17.4	20.6	V	ER110H21	
K10R91A	KC2010	09	14.07226022	39	08.94	+03	49	57.5	20.3	V	ER110H21	
K10R91A	KC2010	09	14.08659	22	39	00.90	+03	49	18.9			ER110204
K10R91A	C2010	09	14.15851	22	38	50.47	+03	46	42.3	19.8	R	ER110G89
K10R91A	C2010	09	14.18003	22	38	45.49	+03	45	52.4	19.8	R	ER110G89
K10R91A	C2010	09	14.20481	22	38	39.70	+03	44	54.8	19.8	R	ER110G89
K10R91A	JC2010	09	14.24941	22	38	29.17	+03	43	13.7	20.0	V	ER110695
K10R91A	JC2010	09	14.25186	22	38	28.59	+03	43	08.0	20.1	V	ER110695
K10R91A	JC2010	09	14.25259	22	38	28.42	+03	43	06.4	20.1	V	ER110695

Observer details:

- [204 Schiaparelli Observatory.](#) Observer L. Buzzi. 0.60-m f/4.64 reflector + CCD.
- [473 Remanzacco.](#) Observers L. Donato, V. Gonano, E. Guido, G. Sostero. 0.45-m f/4.4 Newtonian reflector + CCD.
- [695 Kitt Peak.](#) Observers M. Trueblood, L. Lebofsky, R. Crawford. **Measurer R. Crawford.** 2.1-m f/7.7 Ritchey-Chretien + CCD.
- G89 Kachina Observatory, Flagstaff. Observer J. Hobart. 0.36-m f/11.2 Schmidt-Cassegrain + CCD.
- H21 Astronomical Research Observatory, Westfield. Observer R. Holmes. 0.61-m f/4.0 astrograph + CCD.
- [J04 ESA Optical Ground Station, Tenerife.](#) Observers M. Busch, R. Kresken, H. Luethen. 1.0-m f/4.4 reflector + CCD.

Orbital elements:

2010 RA91				Earth MOID = 0.0031 AU	
Epoch 2010 July 23.0 TT = JDT 2455400.5				MPC	
M	252.15733	(2000.0)	P	Q	
n	0.78500907	Peri.	272.70748	-0.11355593	-0.99351020
a	1.1638212	Node	183.83124	+0.94592840	-0.10610533
e	0.3471178	Incl.	5.60105	+0.30384949	-0.04097727

Tech Info
 Documentation
Links
 Minor Planet Center
 Central Bureau for Astro. Tel.
International Comet Quarterly
 Smithsonian Astro. Obs.

P	1.26	H	23.4	G	0.15	U	8				
Residuals in seconds of arc											
100913	G89	0.1-	0.1-	100913	473	0.1-	0.3-	100914	G89	0.3+	0.1+
100913	G89	0.0	0.1-	100913	473	0.3-	0.4-	100914	G89	0.3+	0.0
100913	G89	0.1+	0.0	100914	H21	0.1-	0.3-	100914	G89	0.2+	0.0
100913	J04	0.3+	0.4+	100914	H21	0.3-	0.3+	100914	695	0.0	0.1-
100913	J04	0.3-	0.2+	100914	H21	0.3-	0.3+	100914	695	0.0	0.1-
100913	J04	0.2+	0.2+	100914	H21	0.3-	0.3-	100914	695	0.1+	0.0
100913	204	0.2+	0.2+	100914	204	0.1+	0.0				



Ephemeris:

2010 RA91		a,e,i = 1.16, 0.35, 6						q = 0.7598	
Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	V	
2010 09 11		22 48.97	+05 34.8	0.149	1.153	167.7	10.7	20.3	
2010 09 13		22 42.77	+04 30.1	0.139	1.142	166.8	11.6	20.1	
2010 09 15		22 35.73	+03 13.5	0.129	1.131	164.9	13.4	20.0	
2010 09 17		22 27.72	+01 43.1	0.119	1.119	162.1	16.0	19.9	
2010 09 19		22 18.57	-00 03.6	0.110	1.108	158.4	19.5	19.8	
2010 09 21		22 08.06	-02 09.3	0.101	1.096	154.0	23.6	19.7	
2010 09 23		21 55.91	-04 36.9	0.0932	1.084	148.9	28.5	19.7	
2010 09 25		21 41.78	-07 29.8	0.0858	1.073	143.1	34.2	19.6	
2010 09 27		21 25.21	-10 50.5	0.0790	1.061	136.4	40.6	19.6	
2010 09 29		21 05.66	-14 40.6	0.0731	1.049	128.9	48.0	19.6	
2010 10 01		20 42.51	-18 58.0	0.0682	1.038	120.4	56.3	19.7	
2010 10 03		20 15.12	-23 35.3	0.0644	1.026	111.1	65.5	19.8	
2010 10 05		19 43.01	-28 17.4	0.0619	1.014	101.1	75.5	20.0	
2010 10 07		19 06.21	-32 42.0	0.0609	1.002	90.6	85.9	20.3	
2010 10 09		18 25.57	-36 24.4	0.0613	0.990	80.1	96.4	20.8	
2010 10 11		17 42.99	-39 05.3	0.0632	0.979	70.0	106.6	21.3	

Timothy B. Spahr

(C) Copyright 2010 MPC

M.P.E.C. 2010-R110

 [Read MPEC 2010-R109](#)  [Read MPEC 2010-R111](#)

Display Clear

Enter an [MPEC](#) number in one of the following forms:


- 1997-B01 (the full form)
- J97B01 (the packed version of the full form)
- B01 (the abbreviated form)



Choose a language to translate this page!

Select to language

Google Translate

 [Gadgets powered by Google](#)

